



Influence of medical and psychological factors on depression in Hemodialysis Patients

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Background

- Patients receiving maintenance hemodialysis (HD) with end-stage renal disease are increasing steadily every year. These patients have not only renal problems but also have various underlying diseases, which are very high mortality rates compared to the general population. Physical and mental limitations arise due to regular visits to the hospital for HD treatment. Psychiatric disorders are common due to a variety of causes, and the prevalence of depression is reported to range from 20 to 70%. However, since psychiatric diseases including depression are overlooked by nephrologists, the control of symptoms is very insufficient.
- The purpose of this study is to investigate the prevalence of depression in HD patients and to investigate the significant clinical factors and psychological factors including quality of life associated with depression.

Method

- Study design:** Cross-sectional study in single center (Daegu Catholic University Medical Center)
- Inclusion**
 - Patients of CKD stage V with hemodialysis (N=160)
 - age ≥ 20
- Exclusion**
 - acute kidney injury
 - hemodialysis vintage < 3 months
- Depression (the scores for depression subscale ≥ 8)**
Using Hospital Anxiety and Depression Scale (HADS)
- Psychosocial factors**
 - Social support using Multidimensional Scale of Perceived Social Support (MSPSS)
 - Anxiety using Hospital Anxiety and Depression Scale
 - Cognitive disorder using Montreal Cognitive Assessment (MOCA)
 - Sleep disorder using Pittsburgh Sleep Quality Index (PSQI)
 - Quality of life using World Health Organization Quality of Life Questionnaire - Brief Version (WHOQO-BREF)

Results

Table 1. Depression Prevalence of Patients with End-Stage Renal Disease on Hemodialysis(N=160)

	Male	Female	total
HADS-D<8	37	26	63
HADS-D ≥ 8	54	43	97
total	91	69	160

HADS-D: Hospital Anxiety and Depression Scale-Depression

Table 2. Mean age of Patients with End-Stage Renal Disease on Hemodialysis(N=160)

Parameter	Mean \pm SD (N=160)
Age	58.17 \pm 11.88

Table 3. Psychosocial factors of hemodialysis patients

Parameter	Mean \pm SD (N=148)
HADS-D	8.91 \pm 4.50
HADS-A	5.41 \pm 4.12
WHOQOL – Physical health domain	17.58 \pm 5.52
WHOQOL – psychological domain	15.45 \pm 4.69
WHOQOL – social relationships domain	7.87 \pm 2.48
WHOQOL – environmental domain	20.97 \pm 6.09
MOCA	19.19 \pm 7.522
PSQI	7.84 \pm 4.58
MSPSS	36.34 \pm 10.83

N: number of patients, HADS-D: hospital anxiety and depression scale-depression, HADS-A: hospital anxiety and depression scale-anxiety, WHOQOL: world health organization quality of life questionnaire-brief version, MOCA: Montreal cognitive assessment, PSQI: Pittsburgh sleep quality index, MSPSS: multidimensional scale of perceived social support

Table 4. Clinical laboratory factors of hemodialysis patients

Parameter	Mean \pm SD (N=154)
Dialysis adequacy (Kt/V)	1.39 \pm 0.48
Albumin g/dL	3.93 \pm 0.34
Hemoglobin, g/dL	10.12 \pm 1.09

N: number of patients, Kt/V: K-dialyzer clearance of urea

Table 5. Univariate analysis of risk factors for depression

Parameter	Odd ratio	95% CI	P-value
WHOQOL Physical health domain	-3.424	-5.794~-1.527	0.001
WHOQOL psychological domain	-3.568	-5.003~-1.414	0.001
WHOQOL social relationships domain	-2.825	-2.011~-0.356	0.005
Anxiety	6.417	2.505~4.736	<0.001
Social support	-2.052	-8.338~-0.124	0.044
Sleep disorder	4.552	1.914~4.852	<0.001

Table 6. Multivariate analysis of risk factors for depression (HADS ≥ 8)

Parameter	Odd ratio	95% CI	P-value
Anxiety	1.314	1.104-1.564	0.002
Sleep disorder	1.150	1.022-1.295	0.020

Conclusions

- This study confirmed that depression occurs in many HD patients. Anxiety and insomnia appeared to be independent risk factors that negatively affect depression. Therefore, through the collaboration with psychiatrist, an accurate diagnosis and active treatment of depression are needed.
- We should develop programs to improve psychological factors such as anxiety and insomnia rather than improvement of clinical factors.

